

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

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NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year)

04.11.2004

Applicant's or agent's file reference
SAIG/P28721PC

IMPORTANT NOTIFICATION

International application No.
PCT/EP 03/07478 /

International filing date (day/month/year)
09.07.2003

Priority date (day/month/year)
10.07.2002

Applicant
SAINT-GOBAIN PAM

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference SAIG/P28721PC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/07478	International filing date (<i>day/month/year</i>) 09.07.2003	Priority date (<i>day/month/year</i>) 10.07.2002
International Patent Classification (IPC) or both national classification and IPC E02D29/14		
Applicant SAINT-GOBAIN PAM		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 8 sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the opinion

II ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

IV ☐ Lack of unity of invention

V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

Date of submission of the demand 06.02.2004	Date of completion of this report 04.11.2004
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div> </div>	Authorized Officer De Neef, K Telephone No. +31 70 340-4340



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/07478**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-4, 6-22 as originally filed
5, 5a filed with telefax on 03.09.2004

Claims, Numbers

3-29 filed with telefax on 06.02.2004
1, 2 filed with telefax on 03.09.2004

Drawings, Sheets

1/8-8/8 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/07478**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-29
	No: Claims	
Inventive step (IS)	Yes: Claims	1-29
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-29
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1.1 The document GB-A-327267 (D2), which is considered as being the closest prior art discloses (the references in parentheses applying to this document) a frame suitable for bounding the open, upper end of a downwardly extending recess formed in a floor or the ground, the frame comprising an upstanding, peripheral wall having protruding outwardly therefrom a flange that is embeddable in a medium so as to retain the frame relative to a said recess; and the frame including secured thereto within the peripheral wall one or more seatings for one* cover (1) that is insertable into the frame with the peripheral wall surrounding at least part of the cover, each seating including a seating member (6) having secured thereto a resiliently deformable pad at least a part of which protrudes from the seating member to provide a resiliently deformable seating surface that is engageable by a part of a said cover, each seating also including a block of material defining an in-use upwardly facing shoulder, that is in use of the frame inclined to define respective upper and lower shoulder edges.

* only one cover is insertable within the frame ("at least one")

The subject-matter of this variant of independent claim 1 differs from the disclosure of D2 in that a) each seating includes a cuboidal block and b) the directions of inclination of the shoulder are such as to promote self centering of a cover supported thereby. Therefore, the subject-matter of independent claim 1 and of the dependent claims 3-29 are therefore novel, Article 33(2) PCT.

1.2 Both contributions are not directly linked by a functional interaction : the shape of the block is cuboidal (a) and the inclination of the block (b) and can therefore the contributions can be considered separately for assessing the obviousness.

Contributions a) : when applying the teaching of D2 to a rectangular manhole assembly, the said shape would not disclose the curve of the round manhole and be therefore cuboidal, meaning 'more or less cubic in shape; a solid which has 6 rectangular faces at right angles to each other' (Oxford Dictionary, Thesaurus and Wordpower Guide) thus arriving at cuboidal block as in the frame according to claim 1, this without the use of any inventive skill and without any surprising effect.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/07478

Contribution b) : there is no hint in D2 to change the directions of inclination of the shoulders, on the contrary, pin (10) in D2 is used to interengage the cover with the frame, which teaches away from solving the objective problem related to this direction of inclination, namely self centering of the cover, because the cover is held in its position by said pin.

1.3 Consequently, the skilled person would in this case not come to contribution a) without changing the shape of the manhole assembly to square and would further not come to contribution b) since the related problem is not addressed in the best prior art. Therefore the solution to this problem proposed in claim 1 and dependent claims 2-29 of the present application is considered as involving an inventive step, Article 33(3) PCT.

2. Present claims 1-29 are considered to be industrially applicable and therefore meet the criteria of Article 33(4) PCT.

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underground services.

According to a first aspect of the invention there is provided a frame for bounding the open, upper end of a downwardly extending recess formed in a floor or the ground, the frame comprising an upstanding, peripheral wall having protruding outwardly therefrom a flange that is embeddable in a medium so as to retain the frame relative to a said recess; and the frame including secured thereto within the peripheral wall two or more seatings for a cover that is insertable into the frame with the peripheral wall surrounding at least part of the cover, the seatings each including a seating member having secured thereto a resiliently deformable and removable pad at least a part of which protrudes from the seating member to provide a resiliently deformable seating surface that is engageable by a part of a said cover, each seating also including a cuboidal block of material defining an in-use upwardly facing shoulder that is in use of the frame inclined to define respective upper and lower shoulder edges, the directions of inclination of the shoulders being such as to promote self-centering of a cover supported thereby.

According to a second aspect of the invention there is provided a manhole assembly comprising a frame for bounding the open, upper end of a downwardly extending recess formed in a floor or the ground, the frame comprising an upstanding, peripheral wall having protruding outwardly therefrom a flange that is embeddable in a medium so as to retain the frame relative to a said recess; and the frame including secured thereto within the peripheral wall one or more seatings for at least one cover that is insertable into the frame with the peripheral wall surrounding at least part of the cover; one or more covers that are insertable into and removable from the frame; and at least four resiliently deformable pads each interconnecting a said cover and a said seating when the or each cover is inserted in the frame, the resiliently deformable pads lying at the corners of a quadrilateral

thereby defined on the in-use underside of the one or more covers, and the or each seating also including a cuboidal block of material defining an in-use upwardly facing shoulder that is in use of the frame inclined to define respective upper and lower shoulder edges, the direction of inclination of
5 the shoulders being such as to promote self-centering of a said cover supported thereby.

Regardless of whether the invention is embodied as a frame or as a manhole assembly the or each resiliently deformable pad preferably is releasably

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CLAIMS

1. A frame for bounding the open, upper end of a downwardly extending recess formed in a floor or the ground, the frame comprising an upstanding, peripheral wall having protruding outwardly therefrom a flange that is embeddable in a medium so as to retain the frame relative to a said recess; and the frame including secured thereto within the peripheral wall two or more seatings for at least one cover that is insertable into the frame with the peripheral wall surrounding at least part of the cover, the seatings each including a seating member having secured thereto a resiliently deformable pad at least a part of which protrudes from the seating member to provide a resiliently deformable seating surface that is engageable by a part of a said cover, each seating also including a cuboidal block of material defining an in-use upwardly facing shoulder that is in use of the frame inclined to define respective upper and lower shoulder edges, the directions of inclination of the shoulders being such as to promote self-centering of a cover supported thereby.
2. A manhole assembly comprising a frame for bounding the open, upper end of a downwardly extending recess formed in a floor or the ground, the frame comprising an upstanding, peripheral wall having protruding outwardly therefrom a flange that is embeddable in a medium so as to retain the frame relative to a said recess; and the frame including secured thereto within the peripheral wall two or more seatings for at least one cover that is insertable into the frame with the peripheral wall surrounding at least part of the cover; one or more covers that are insertable into and removable from the frame; and at least four resiliently deformable pads each interconnecting a said cover and a said seating when the or each cover is inserted in the frame, the resiliently deformable pads lying at the corners of a quadrilateral thereby defined on the in-use underside of the one or more covers, and the or each seating also including a cuboidal block of material defining an in-use upwardly facing shoulder that is in use of the frame inclined to define respective upper and lower shoulder edges, the directions of inclination of the shoulders being such as to promote self-centering of a said cover supported thereby.

3. A frame according to Claim 1 or a manhole assembly according to
Claim 2 wherein the or each resiliently deformable pad is releasably
5 securable in a seating member.

4. A frame according to Claim 1 or any preceding claim depending
therefrom; or a manhole assembly according to Claim 2 or any preceding
claim depending therefrom wherein the upstanding wall is rectangular
10 when viewed in plan, the frame including a said seating in at least two
corners of the thus-defined rectangle.

5. A frame or a manhole assembly according to Claim 3 including a
said seating in all four corners of the rectangle.

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6. A frame according to Claim 1 or any preceding claim depending
therefrom; or a manhole assembly according to Claim 2 or any preceding
claim depending therefrom wherein the upstanding wall is rectangular
when viewed in plan, the frame including at least one said seating part-way
20 along at least one side of the thus-defined rectangle.

7. A frame according to Claim 1 or any preceding claim depending
therefrom; or a manhole assembly according to Claim 2 or any preceding
claim depending therefrom wherein the or each upwardly facing shoulder
25 has formed therein a mortise that defines a slot that is open on the upwardly
facing shoulder and on a further face of the cuboidal block.

8. A frame or a manhole assembly according to Claim 7 wherein the
mortise defines a base that in use of the frame lies beneath the shoulder, the
30 mortise tapering in width between the base and its opening on the shoulder,
the resiliently deformable pad including an engaging portion of generally

complementary cross section to that of the mortise, the pad being restrained against movement relative to the mortise in the in-use vertical direction by engagement of the engaging portion in the mortise.

5 9. A frame or a manhole assembly according to Claim 8 wherein the pad includes a region of material that is secured to the engaging portion and protrudes from the seating member via the opening in the shoulder.

10 10. A frame or a manhole assembly according to any of Claims 7 to 9 wherein the opening in the further face of the cuboidal block is of a shape and orientation that permits insertion of the pad into the slot and its removal therefrom, in a direction other than the in-use vertical direction.

15 11. A frame or a manhole assembly according to any preceding claim including a pair of the seating members that are spaced from one another in the in-use horizontal direction and the upwardly facing shoulders of which are mirror images of one another whereby the upper shoulder edges define the furthest spaced apart regions of the pair of seating members.

20 12. A frame according to Claim 1 or any preceding claim depending therefrom having one or more covers resting thereon.

25 13. A frame according to Claim 10 or a manhole assembly according to Claim 2 or any preceding claim depending therefrom wherein the frame and each cover include co-operating hinge parts formed respectively on a side of the cover and a first side of the frame whereby the or each cover is hingedly secured to the frame at the first side thereof; the or each cover substantially spanning the frame from the first side to a second side opposite the first side.

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14. A frame or a manhole assembly according to Claim 13 wherein the

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second side has secured thereat a respective pair of the seatings that are engageable by the underside of each of the covers.

15. A frame according to Claim 13 or Claim 14 that is essentially
5 rectangular and includes a plurality of the covers arranged side by side, all of the covers being hinged on the same side of the frame whereby the covers are openable to leave free access to the recess on all the remaining sides of the frame.

10 16. A manhole assembly according to Claim 2 and Claim 13 or Claim 14 wherein the frame is essentially rectangular and includes a plurality of the covers arranged side by side, all of the covers being hinged on the same side of the frame whereby the covers are openable to leave free access to the recess on all the remaining sides of the frame.

15 17. A frame according to Claim 15 wherein the upstanding wall is rectangular when viewed in plan; and wherein each cover is rectangular, the major axis of each said cover lying perpendicular to the major axis of the rectangle defined by the upstanding wall; and the edges of adjacent said
20 covers lying spaced from one another such that the covers are capable of overlying substantially the entire aperture defined by the recess.

18. A manhole assembly according to Claim 2 and Claim 16 wherein the upstanding wall is rectangular when viewed in plan; and wherein each
25 cover is rectangular, the major axis of each said cover lying perpendicular to the major axis of the rectangle defined by the upstanding wall; and the edges of adjacent said covers lying spaced from one another such that the covers are capable of overlying substantially the entire aperture defined by the recess.

30 19. A frame according to any of Claims 12 to 15 or 17 wherein one or

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more said covers is substantially imperforate.

20. A manhole assembly according to any of Claims 12 to 14, 16 or 18 wherein one or more said covers is substantially imperforate.

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21. A frame according to any of Claims 1, 3 to 15, 17 or 19 wherein one or more said covers is perforated to define a grating.

22. A manhole assembly according to any of Claims 2 to 14, 16, 18 or 20 wherein one or more said covers is perforated to define a grating.

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23. A frame according to any of Claims 1, 3 to 15, 17, 19 or 21 the width of the flange of which varies from place to place about the periphery of the frame.

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24. A manhole assembly according to any of Claims 2 to 14, 16, 18, 20 or 22 the width of the flange of which varies from place to place about the periphery of the frame.

25. A frame according to any of Claims 1, 3 to 15, 17, 19, 21 or 23 including protrusions or recesses formed on one or more surfaces thereof that are embeddable in a bonding medium at the open, upper end of the recess, the protrusions or recesses enhancing the bonding of the frame in the medium and stiffening the frame.

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26. A manhole assembly according to any of Claims 2 to 14, 16, 18, 20, 22 or 24 wherein the frame includes protrusions or recesses formed on one or more surfaces thereof that are embeddable in a bonding medium at the open, upper end of the recess, the protrusions or recesses enhancing the bonding of the frame in the medium and stiffening the frame.

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27. A frame according to Claim 25 or a manhole assembly according to Claim 26 wherein the protrusions or recesses include an array of ribs formed on an upwardly and/or downwardly facing surface of the flange.

5 28. A frame or a manhole assembly according to Claim 27 wherein the ribs of the array are elongate and are mutually parallel, and all protrude by generally the same amount from the flange.

10 29. A frame or a manhole assembly according to Claim 28 wherein the frame is generally polygonal when viewed in plan, and wherein the elongate axis of each rib is generally parallel with a diagonal of the thus-defined polygon.